

FABRICATION OF SEMICONDUCTOR LASER

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Abstract

PURPOSE: To mass produce high performance semiconductor lasers excellent in environmental resistance at low cost.

CONSTITUTION: Two stripe masks 2 formed in (011) direction on (100) face of a semiconductor substrate 1 composed of n-InP are employed as selection masks in the formation of an active layer stripe 13 through metal organic vapor phase epitaxial growth, the stripe 2 is then removed and filling growth is performed. Since metal organic vapor phase epitaxial growth is employed, large area uniform growth is realized on a circular wafer having diameter of two inches or more. Furthermore, since the active layer stripe 13 is formed through selective growth employing a mask, side wall of the active layer stripe 13 can be made smooth in the order of atomic layer. Since waveguides of semiconductor laser do not scatter and loss thereof is reduced, oscillation threshold current and operating current of semiconductor laser can be lowered.